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EP 0951900 A2

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(54) Abstract Title

Ammonia-free hair colouring formulation comprising wax base, oleic acid soap base & monoethanolamine, together with fruit oil containing activator formulation

(57) A hair colouring formulation comprises water, chelating agent, antioxidant, solvent, dye, wax base in an amount of from 22% to 25% by weight, oleic acid in an amount of from 3 to 4% by weight to provide a soap base and monoethanolamine in an amount of from 10 to 12.5% by weight to achieve a pH of from 11 to 12 (preferably from 11.4 to 11.6). Also provided is a hair colouring system comprising the hair colouring formulation in combination with an activator formulation which includes a fruit oil (eg avocado oil) preferably in an amount of from 1% to 3% by weight of the activator formulation.

The fruit, especially avocado oil, is particularly effective in reducing irritation while proving effective hair conditioning.

The hair colouring formulation is free from ammonia. This is advantageous because ammonia has an unattractive smell, is harsh on hair and can weaken hair.

GB 2 358 643 A

"A FORMULATION"Introduction

The invention relates to a hair colouring formulation.

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Many different hair colouring formulations are available. There are however a number of problems with conventional formulations. In general known formulations are either weak and do not effectively colour the hair and maintain the colour or are very strong and damage delicate hair.

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There is therefore a need for an improved hair colour formulation which will overcome at least some of these problems.

Statements of Invention

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According to the invention there is provided a hair colouring formulation comprising water, chelating agent, antioxidant, solvent, dye, wax base in an amount of from 22% to 25% by weight, oleic acid in an amount of from 3 to 4% by weight to provide a soap base and monoethanolamine in an amount of from 10 to 12.5% by weight to achieve a pH of from 11 to 12, preferably from 11.4 to 11.6.

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Preferably the wax base is derived from soya.

In one embodiment of the invention the chelating agent is tetra sodium EDTA. Preferably the EDTA is present in an amount of from 0.15 to 2% by weight, most preferably in an amount of from 0.3% to 1% by weight.

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In a preferred embodiment of the invention the solvent includes diethylene glycol. Preferably diethylene glycol is present in an amount of from 4% to 7% by weight, most preferably in an amount of approximately 5.68% by weight.

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In a preferred embodiment the solvent includes propylene glycol. Preferably the propylene glycol is present in an amount of from 3% to 5% by weight, most preferably in an amount of approximately 4.3% by weight.

- 5 In one embodiment of the invention the antioxidant is an antioxidant system comprising at least two different antioxidants.

One of the antioxidants is preferably sodium sulfite.

- 10 One of the antioxidants is preferably sodium isoascorbate.

The invention further provides a hair colouring system comprising a hair colouring formulation in combination with an activator formulation including a fruit oil.

- 15 Preferably the fruit oil is avocado oil.

- In a preferred embodiment of the invention the fruit oil is present in an amount of from 1% to 3% by weight of the activator formulation, preferably in an amount of approximately 2% by weight.
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Detailed Description

- 25 The invention will be more clearly understood from the following description thereof given by way of example only.

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Example 1 Hair colouring formulation

A - Colour Base

	<u>Ingredient</u>	<u>parts by weight</u>
5	1. Water	53.2
	2. Tetra Sodium EDTA	0.3
	3. Sodium Sulfite	0.404
	4. Propylene glycol	4.3
10	5. Sodium isoascorbate	0.2
	6. Dihydroxyethyl Soyamine Dioleate	10.0
	7. Polyethylene Glycol (3) Coco Amine	3.6
	8. Polyoxyethylene (2) Cetyl Stearyl Ether	9.0
	9. Oleic Acid	3.88
15	10. Diethylene Glycol	5.68

B Permanent Colour

	1. Dye Formulation	0.45
20	2. Monoethanolamine	12.5

The tetra sodium EDTA is a chelating agent and the amount present in the formulation may be varied depending on the effect required. The amount is increased where high lift is required.

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Sodium sulfite and sodium isoascorbate are antioxidants. Propylene glycol is a solvent as is diethylene glycol. Diethylene glycol is an effective solvent.

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Dihydroxyethyl Soyamine Dioleate, Polyethylene Glycol (3) Coco Amine, Polyoxyethylene (2) Cetyl Stearyl Ether (Ceterath-2) comprise the wax base and are derived from soya. The components of the wax are available, for example from Jos. H. Lowenstein & Sons, Inc.

In a first tank items 1 to 5 of the colour base are dissolved and the mixture is heated to from 50 to 55°C.

5 In a second tank items 6 to 9 are mixed and the mixture is heated to from 50 to 55°C to form a liquid.

10 The dye formulation is added to tank 1 and dissolved. The wax and soap mixture is then transferred from the second tank to the first tank. The mixture is stirred for 10 to 15 minutes. Finally monoethanolamine is added to achieve the desired pH of from 11.4 to 11.6.

15 In use, the hair colour formulation thus formed is combined either with a conventional cream peroxide base or preferably with an activator formulation, especially as follows.

Example 2 – Activator Formulation

20 Typical 6% peroxide. The amount of peroxide may be 3% for no lift or 12% to achieve maximum lift.

	<u>Ingredient</u>	<u>parts by weight</u>
	1. Hydrogen Peroxide	17.0
25	2. Sodium Salicylate	0.5
	3. Waxes	3.5
	4. Citric acid	0.3
	5. Advocado oil	2.0
	6. Perfume	0.2
30	7. Sodium laurylsulphate	2.5
	8. Mineral oil	2.0
	9. Water	Balance

The fruit, especially avocado oil, is particularly effective in reducing irritation while proving effective hair conditioning.

5 The hair colouring formulation is particularly effective in use. In combination with the activator formulation it provides good colour without damaging the hair.

10 Ammonia is commonly used in conventional hair colouring formulations. However the use of ammonia is undesirable for several reasons including its unattractive smell and its harshness on the hair. Excessive use of ammonia has been shown to weaken hair. The formulation of the invention is free from ammonia. The mixture thus formed is filled into tubes by first purging an empty tube with Nitrogen to exclude air, adding the mixture, further purging with Nitrogen and sealing.

15 The invention is not limited to the embodiments hereinbefore described which may be varied in detail.

CLAIMS

1. A hair colouring formulation comprising water, chelating agent, antioxidant, solvent, dye, wax base in an amount of from 22% to 25% by weight, oleic acid in an amount of from 3 to 4% by weight to provide a soap base and monoethanolamine in an amount of from 10 to 12.5% by weight to achieve a pH of from 11 to 12.
2. A formulation as claimed in claim 1 wherein the pH is from 11.4 to 11.6.
3. A formulation as claimed in claim 1 or 2 wherein the wax base is derived from soya.
4. A formulation as claimed in any of claims 1 to 3 wherein the chelating agent is tetra sodium EDTA.
5. A formulation as claimed in claim 4 wherein the EDTA is present in an amount of from 0.15 to 2% by weight.
6. A formulation as claimed in claim 4 or 5 wherein the EDTA is present in an amount of from 0.3% to 1% by weight.
7. A formulation as claimed in any preceding claim wherein the solvent includes diethylene glycol.
8. A formulation as claimed in claim 7 wherein diethylene glycol is present in an amount of from 4% to 7% by weight.
9. A formulation as claimed in claim 7 wherein diethylene glycol is present in an amount of approximately 5.68% by weight.

10. A formulation as claimed in any preceding claim wherein the solvent includes propylene glycol.
- 5 11. A formulation as claimed in claim 10 wherein propylene glycol is present in an amount of from 3% to 5% by weight.
12. A formulation as claimed in claim 10 wherein propylene glycol is present in an amount of approximately 4.3% by weight.
- 10 13. A formulation as claimed in any preceding claim wherein the antioxidant is an antioxidant system comprising at least two different antioxidants.
14. A formulation as claimed in claim 13 wherein one of the antioxidants is sodium sulfite.
- 15 15. A formulation as claimed in claim 13 or 14 wherein one of the antioxidants is sodium isoascorbate.
16. A hair colouring formulation substantially as hereinbefore described.
- 20 17. A hair colouring system comprising a hair colouring formulation as claimed in any of claims 1 to 16 in combination with an activator formulation including a fruit oil.
- 25 18. An activator formulation as claimed in claim 17 wherein the fruit oil is avocado oil.
19. An activator formulation as claimed in claim 17 or 18 wherein the fruit oil is present in an amount of from 1% to 3% by weight of the activator formulation.
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20. An activator formulation as claimed in any of claims 17 to 19 wherein the fruit oil is present in an amount of approximately 2% by weight.



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Claims searched: 1-17

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Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.R):

Int Cl (Ed.7):

Other: Online: EPODOC, JAPIO, WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	EP 0951900 A2 (BRISTOL-MYERS SQUIBB) & WPI Abstract Accession No 1999-582671/50, see WPI abstract	-

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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